Hazardous Waste

INTERACTIVE DISCUSSIONS AND MINISTERIAL ROUND TABLE ON WASTE MANAGEMENT

Commission for Sustainable Development (CSD-18)

United Nations, New York

Prasad Modak

Executive President,

Environmental Management Centre, India

May 6, 2010

Hazardous waste: A Complex Problem

- High-risk waste
- Dangerous to handle
- Requires sophisticated & specialized treatment

- Direct threat to environment and human health
- Sensitive import and export related Issues

Sources of Hazardous Wastes

- Often a result of **use of hazardous substances** (chemicals and materials) The consumption and production of chemicals in developing countries is growing much faster than in developed countries and could account for a third of global consumption by 2020.

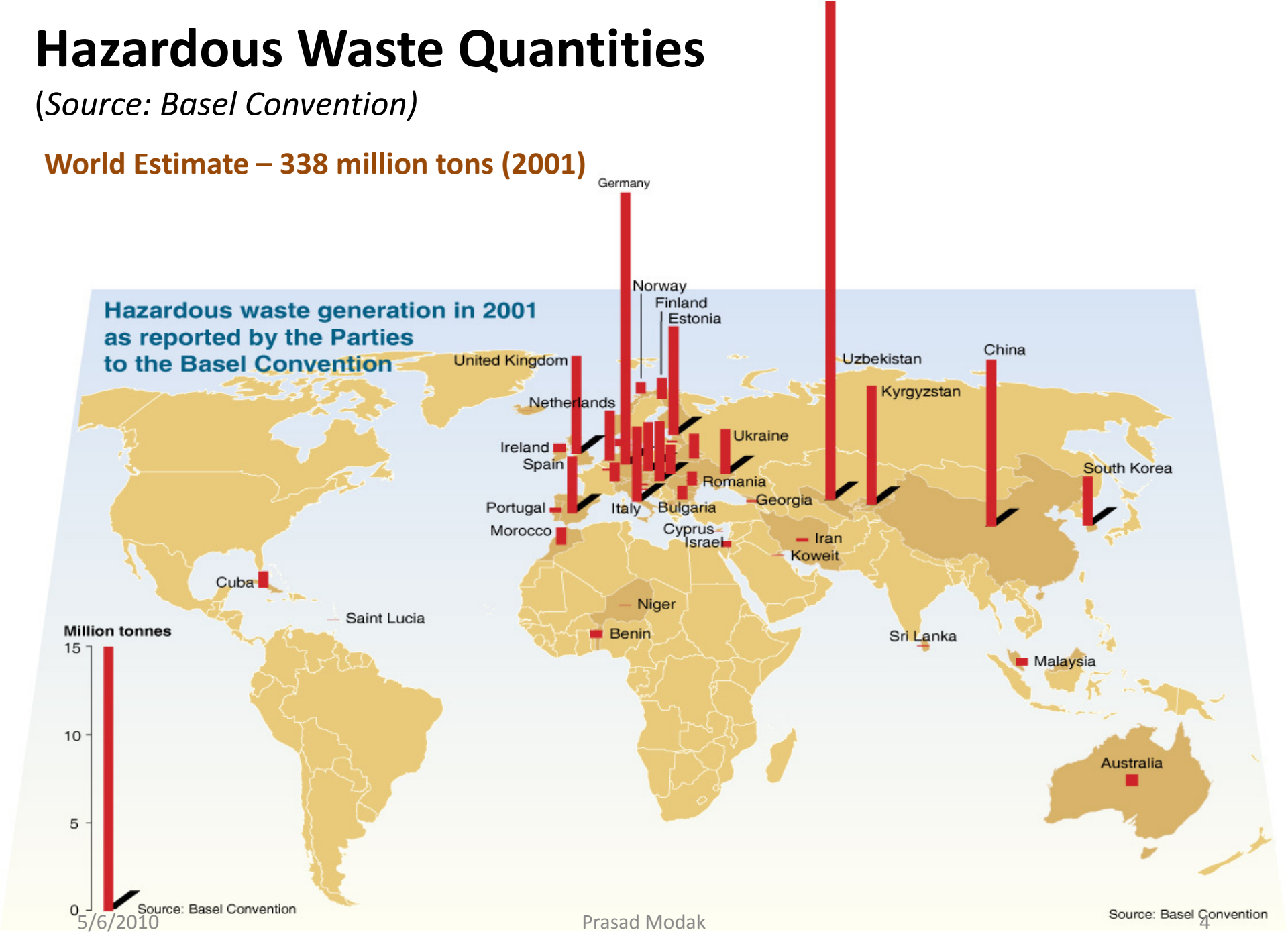
- **Use of inappropriate technologies** that have poor resource conversion and deploy processes that generate hazardous residues (Many industries in developing world use outdated or banned technologies)

- **End of pipe treatment** of effluents/emissions streams often result into residues that contain hazardous constituents (while gases and liquids meet the standards, the residues don't!)

Hazardous Waste Quantities

(*Source: Basel Convention)*

World Estimate – 338 million tons (2001)



Management of hazardous waste

Standards, Enforcement & Monitoring

Institutional arrangements and Capacities

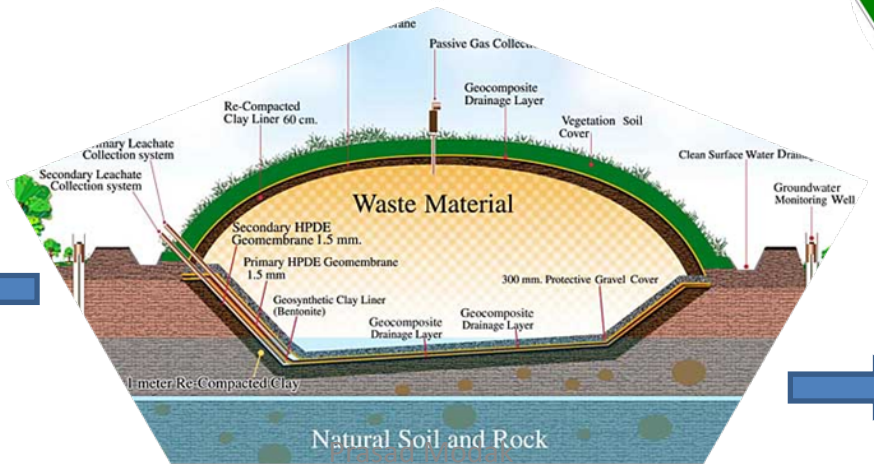
High calorific value
Highly toxic waste

Stable waste

Treatable / Recyclable waste

Incineration

Public Objection



Secured Landfill

Use of advanced technologies

Treatment , Recovery, Recycling

Requires Significant Investments

Photo Courtesy: PPLi

Cases of Illegal Waste Traffic

- 120 drums of mercury-contaminated wastes imported to South Africa from the USA annually since 1986 (CEPFS 19, 2004)
- 48% of waste shipments in 17 European seaports were illegal under EU regulations (IMPEL Press Release Dt. 08 Nov 2005)
- In the UK alone, at least 23,000 metric tonnes of undeclared or 'grey' market electronic waste was illegally shipped in 2003 to the Far East, India, Africa and China (GreenPeace)

E-Waste

- Some 20 to 50 million metric tonnes of e-waste are generated worldwide every year. **In Europe e-waste is increasing by 3–5 per cent per year.**

- **A growing share of municipal waste contains hazardous electronic or electric products.** In 2005 estimated to constitute about 8 per cent of municipal waste in developed countries

- **More than 90 per cent of discarded computers from the developed world are exported to developing countries purportedly for recycling**. Many end up, however, in toxic wastelands where the heavy metals and toxic chemicals are released into the soil, atmosphere and water supply.

- A study in India showed that 95 per cent of e-waste is segregated, dismantled and recycled in the **informal sector based in urban slums**

Movement of E-Waste

Note:
Map created by UNEP/GRID-Arendal 2004, Thickness of arrows are not proportional to the traffic

Sources:
Basel Action Network,
Silicon Valley Toxic Coalition Network,
Toxic Link India,
SCOPE (Pakistan),
Greenpeace China, 2002

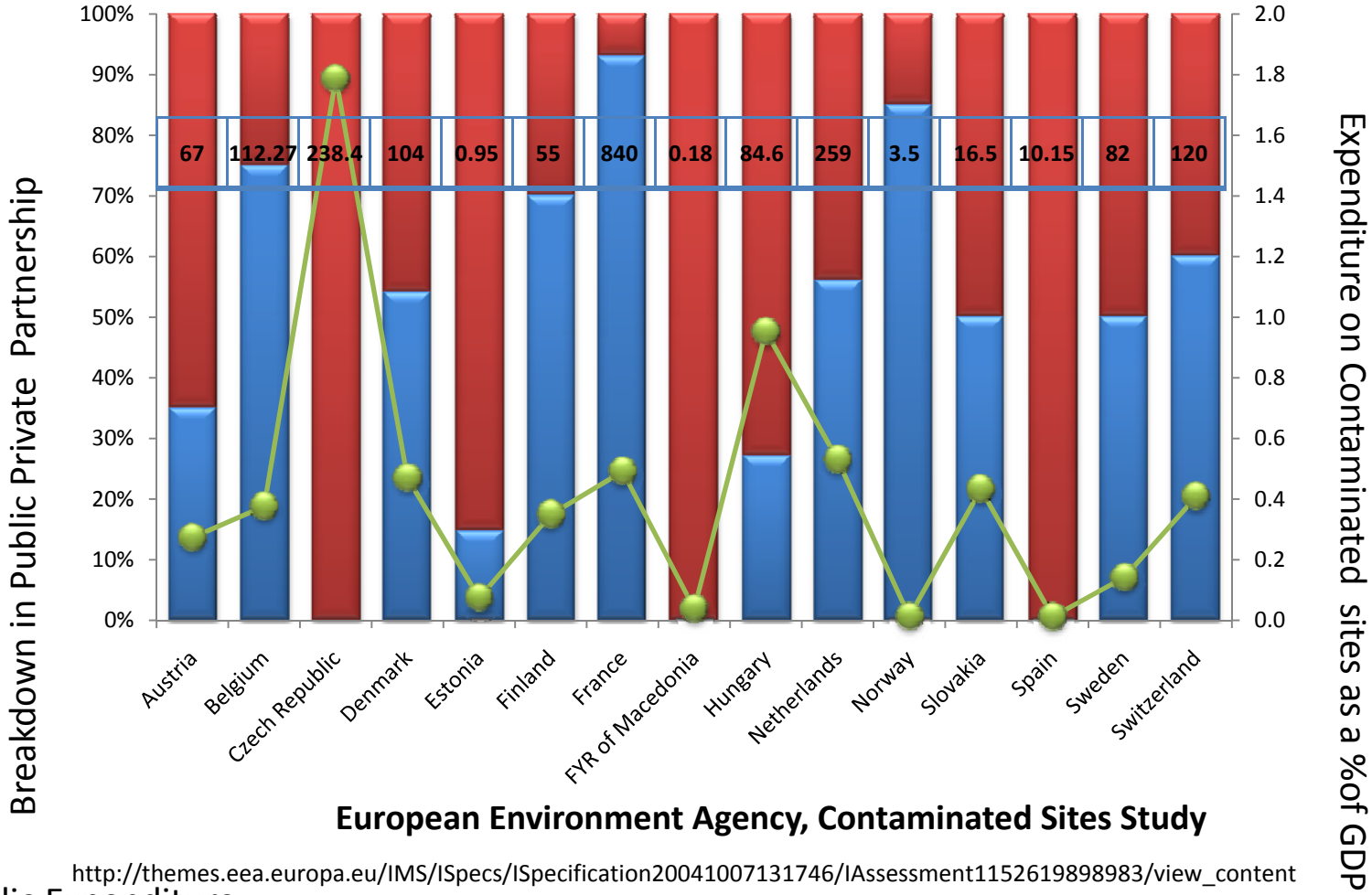
Contamination of resources by illegal dumping of hazardous waste

- Long term ecological, public health and economic impacts
- Polluters taking advantage of weak legislation, inadequate infrastructure and poor institutional capacities regarding management of hazardous waste
- Threat to public health due to contamination of resources and to ecosystems due to bioaccumulation of toxic constituents

The Most Polluted Places in the World

Ref: http://www.bookofjoe.com/2010/04/worlds-most-polluted-places.html

Total Expenditure in million Euros



http://themes.eea.europa.eu/IMS/ISpecs/ISpecification20041007131746/IAssessment1152619898983/view_content

Public Expenditure

Private Expenditure

Percent of expenditure on cont. site remediation of the GDP

Hazardous Waste as addressed in Chapter 20, Agenda 21

- preventing or minimizing the generation of hazardous wastes as part of an overall **integrated cleaner production approach**;

- eliminating or reducing to a **minimum transboundary movements** of hazardous waste;

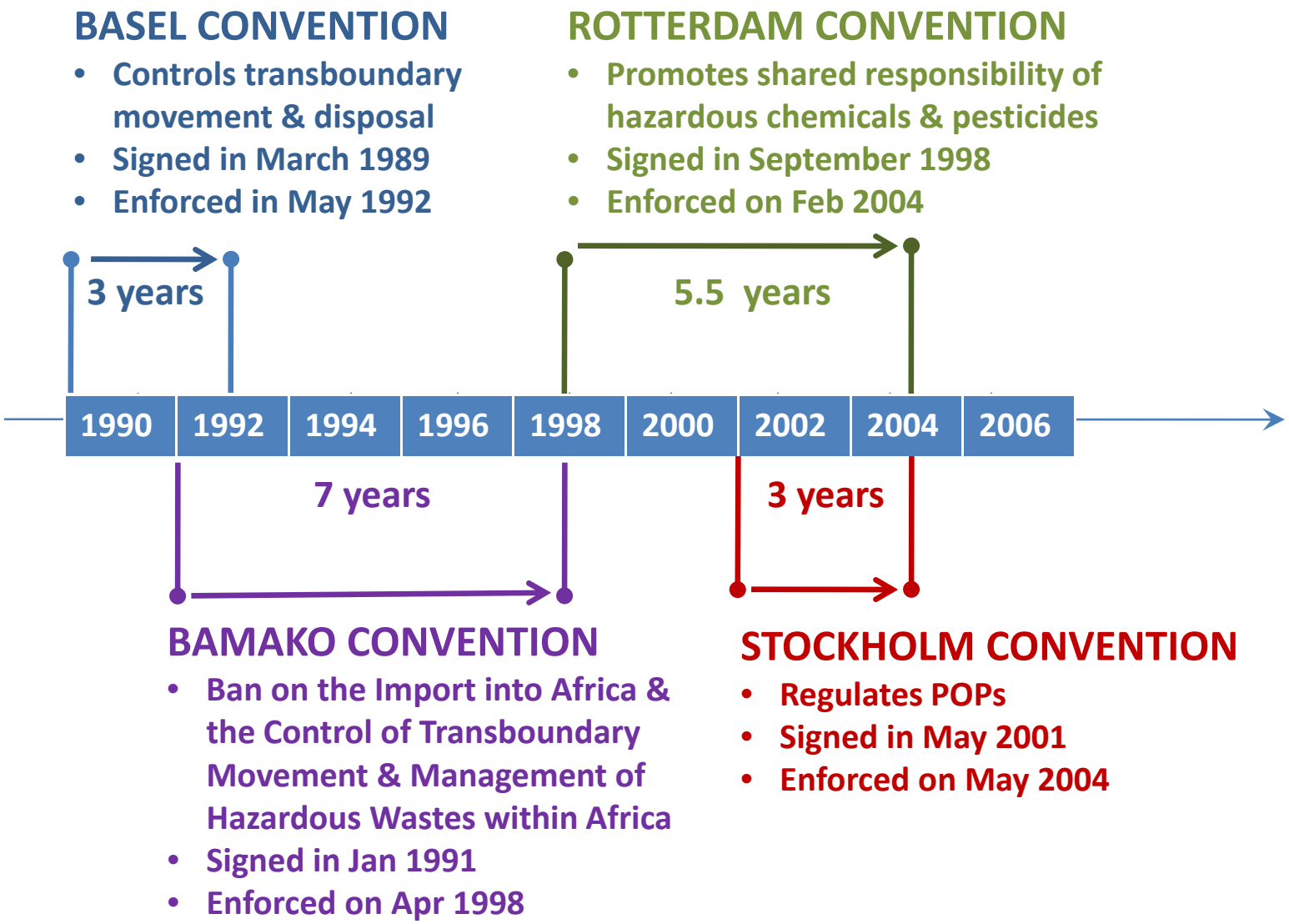
- **ratifying the Basel Convention** on the Control of Transboundary Movements of Hazardous Wastes and their Disposal;

- **ratifying and full implementation of the Bamako Convention** on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa; and eliminating the export of hazardous wastes to countries that prohibit such imports.

Ministerial Statement on Partnerships for Meeting the Global Waste Challenge (COP7), 2004

- **Environmentally sound management of hazardous wastes as part of the wider issues** of water protection, improved sanitation, SWM & economic and social development.
- **Reduction of the impacts of hazardous wastes on human health & the environment**
- Promotion of a fundamental **shift in emphasis from remedial measures to preventive measures** such as reduction at source, reuse, recycling and recovery.
- Recognition of **the importance of mobilizing new and additional financial resources** to build partnerships to meet the global waste challenge worldwide

Treaties and Conventions



Note: Arrows denote year of progress of the convention from ratification to enforcement


168 Parties to the Basel Convention in 2006
(167 States and the European Community)
Russian Federation
Slovakia
China
Tehran
Egypt
Senegal
Trinidad and Tobago
El Salvador
Nigeria
South Pacific region
Indonesia
South Africa
Uruguay
Argentina
Number of member states
160
120
80
40
1993 1996 2000 2003 2006
The Basel Convention
Non-parties
Parties
Parties who reported their hazardous waste exports and imports for 2004 (latest reporting year)
Regional centre
Note: The regional centres undertake regional projects and deliver training and technology transfer for the implementation of the Convention.
Source: Basel Convention.
How many Parties since 1993?

International Efforts to control Illegal Traffic of Hazardous Waste

Green Customs Initiative

International Maritime Organization
169 member countries

Interpol Environmental Crime Unit
188 member countries

European Union Network for the Implementation and Enforcement of Environment Law
31 countries, 36 members

United Nations Office on Drugs and Crime

World Customs Organizations
176 member countries

International Network for Environmental Compliance and Enforcement
150 countries, 4000 members

Johannesburg Plan of Implementation

(Paragraphs related to Hazardous Wastes)

- 23. Renew the commitment, as advanced in Agenda 21, **to sound management of chemicals throughout their life cycle** and of hazardous wastes for sustainable development as well as for the **protection of human health and the environment**, inter alia, aiming to achieve, by 2020, that chemicals are used and produced in ways that lead to the minimization of significant adverse effects on human health and the environment, using transparent **science-based risk assessment procedures and science -based risk management procedures, taking into account the precautionary approach,** as set out in principle 15 of the Rio Declaration on Environment and Development, and **support developing countries in strengthening their capacity for the sound management of chemicals and hazardous wastes by providing technical and financial assistance.**

Other Responses

- The average number of chemicals risk assessments undertaken from 2001 to 2009 compared the period between 1995 and 2000 has multiplied sevenfold.

- Waste-to-energy is a growing field. The EU considers waste-to-energy as the preferred method of waste disposal. The facilities in Europe can provide 32 million inhabitants with heat and 25 million with electricity.

- Recycling is an effective means to reduce energy use, CO2 emissions and waste at the same time. The general trend throughout the last 25 years indicates an increase in recycling rates.

- A National Geographic and GlobeScan survey finds that environmentally friendly consumer behavior has increased in 13 of the 14 countries surveyed in both 2008 and 2009.

Upstream Actions

- Integrated Cleaner Production Approach - Minimize/ Prevent hazardous waste at source through eco-design, apply Cleaner Technologies and Green Chemistry
- Practicing 3Rs
- Greening of supply chains, Extended Producer Responsibility
- Raising Consumer Awareness – promoting environmentally preferred products based on Life Cycle Perspective

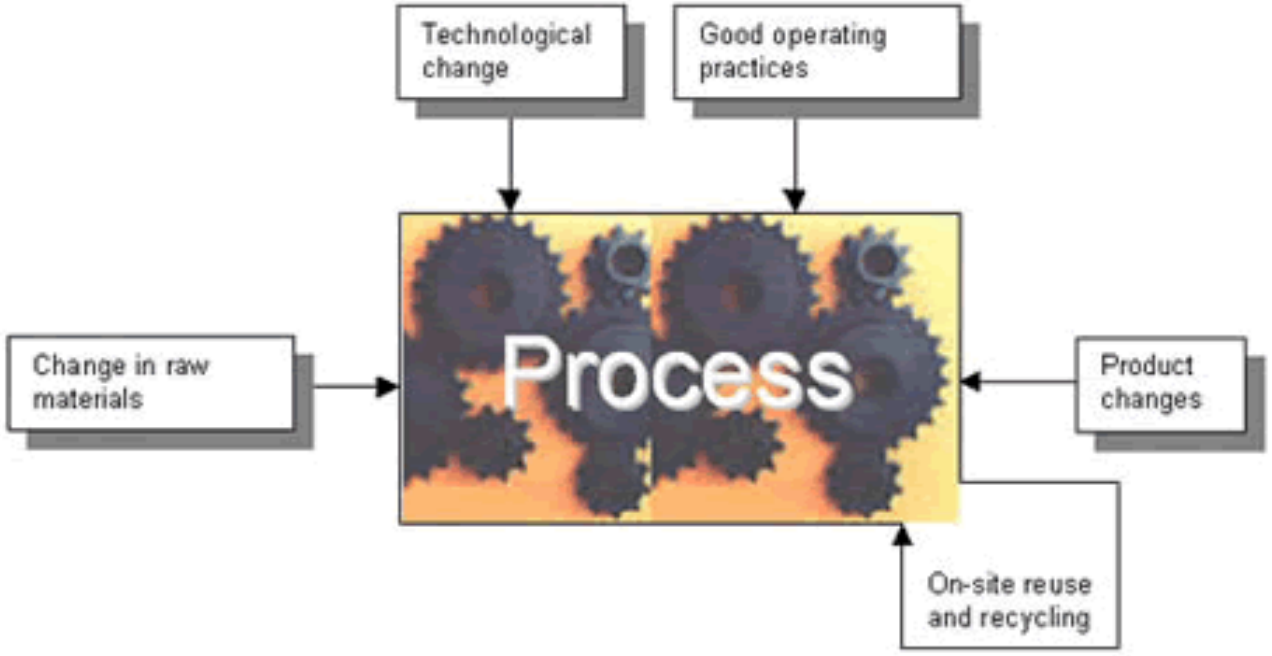


Image source: UNEP

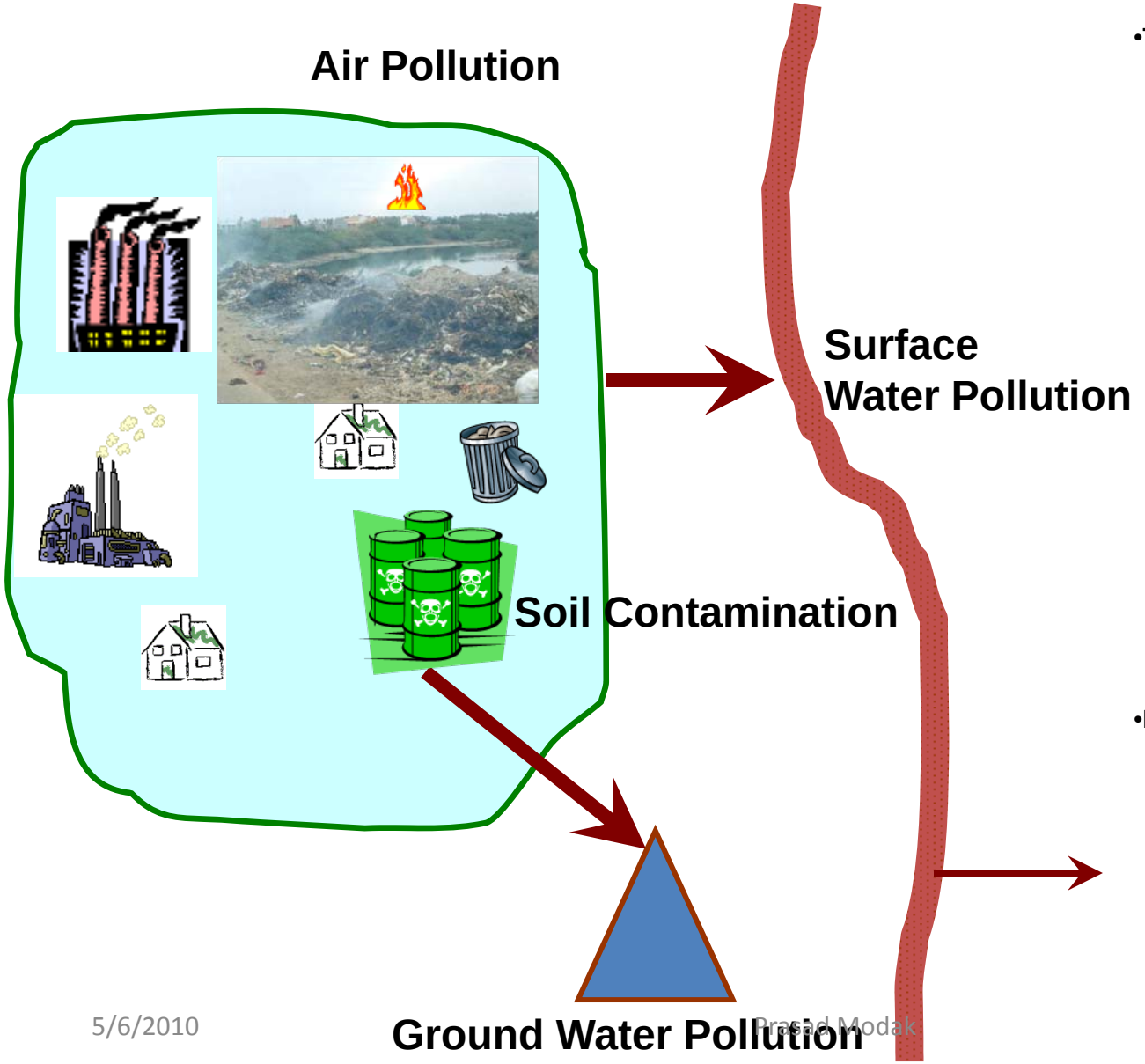
Downstream and Regulatory Actions

- Robust and comprehensive hazardous waste **inventorization**
- Provision of **Common hazardous waste management infrastructure** for safe handling, treatment and disposal
- **Application of polluters pay principle** – especially for remediation of sites contaminated by hazardous wastes
- **Capacity building** at national and local levels
- **Community Action & Involvement** – especially on hazardous waste tracking
- **Punitive Action** against unscrupulous traders involved in hazardous waste
- Addressing the **health safety issue of waste handlers**

A Proposition for Global Pilots for Action

Global Pilots for Action on Hazardous Waste

Area-Based Approach



- **Technical Assistance**
  - Inventorization/Registry of chemicals
  - Phase out of harmful substances, objectionable technologies etc.
  - Demonstration Projects for hazardous waste minimization and self-regulation (e.g. ISO 14001 EMS)
  - Structured Stakeholder Consultations
  - Training and building of institutional capacities
  - Strengthening of policies regulations and standards
  - Monitoring to assess environmental, social and economic benefits
- **Investments**
  - Common Environmental infrastructure (incl. application of 3Rs i.e. resource recovery recycling and reuse, Treatment and secured disposal with leachate management, emergency preparedness/response center
  - Remediation of Contaminated site e.g. using biotechnology

Global Pilots for Actioning on Hazardous Waste may show the way …

- Global Pilots of Action may be taken up in areas with high generation of hazardous waste across various regions / countries
- These pilots will help in
- Knowledge networking – sharing of experiences
- Influence national policies, build institutional capacities (learning while doing)
- Establish cleaner technologies and Upscale/replicate by building on pilot experience
- Stimulate investments

THANK YOU